

**PERFORMANCE MEASUREMENT IN ISO AND NON-ISO COMPANIES: A  
COMPARATIVE STUDY**

A project paper submitted to the Graduate School in partial  
fulfilment of the requirements for the degree  
Master of Business Administration  
Universiti Utara Malaysia

BY

Zureen binti Hashim

© Zureen binti Hashim, 2000. All rights reserved.



**Sekolah Siswazah  
(Graduate School)  
Universiti Utara Malaysia**

**PERAKUAN KERJA KERTAS PROJEK  
(Certification of Project Paper)**

Saya, yang bertandatangan, memperakukan bahawa  
(I, the undersigned, certify that)

ZUREEN BINTI HASHIM

calon untuk Ijazah

(candidate for the degree of) Sarjana Pentadbiran Perniagaan (MBA)

telah mengemukakan kertas projek yang bertajuk

(has presented his/her project paper of the following title)

PERFORMANCE MEASUREMENT IN ISO AND NON - ISO COMPANIES : A COMPARATIVE  
STUDY

seperti yang tercatat di muka surat tajuk dan kulit kertas projek  
(as it appears on the title page and front cover of project paper)


bahawa kertas projek tersebut boleh diterima dari segi bentuk serta kandungan,  
dan meliputi bidang ilmu dengan memuaskan.

(that the project paper acceptable in form and content, and that a satisfactory  
knowledge of the field is covered by the project paper).

Nama Penyelia

(Name of Supervisor): Prof. Madya Dr. Zakaria Abas

Tandatangan  
(Signature)



Tarikh  
(Date)

: 19/09/2000

## **PERMISSION TO USE**

In presenting this project paper in partial fulfillment of the requirements for a post graduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for copying this project paper in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor(s) or in their absence by the Dean of The Graduate School. It is understood that any copying or publication or use of this project paper or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my project paper.

Requests for permission to copy or to make other use of materials in this project paper, in whole or in part, should be addressed to:

**Dean of Graduate School  
Universiti Utara Malaysia  
06010 UUM Sintok  
Kedah Darulaman.**

## Abstrak

Kajian ini bertujuan untuk mengenalpasti pengukur prestasi yang lazim digunakan oleh syarikat-syarikat yang telah memperolehi ISO dan syarikat yang tidak mempunyai ISO. Melalui pendekatan kajian kes, objektif khusus kajian ini adalah untuk melihat sama ada terdapat perbezaan dalam penggunaan pengukuran prestasi. Terdapat lima dimensi yang dikaji iaitu Kepentingan Pengukur Bukan Kewangan (NFI) Berbanding Pengukur Berbentuk Kewangan Dalam Konteks Dimensi Prestasi, Kekerapan Penggunaan Pengukur Bukan Kewangan, Prestasi Dicapai Bagi Tempoh Kewangan (1 Tahun), Tanggapan Kepentingan Dimensi Prestasi Dan Penilaian Kepentingan Kriteria Kualiti. Data telah dikumpul dengan menghantarkan borang soal selidik kepada syarikat-syarikat terbabit. Responden-responden merupakan syarikat-syarikat besar terdiri dari ahli Malaysian International Chamber of Commerce & Industry (MICCI) yang mengeluarkan semikonduktor. Tiga daripada syarikat-syarikat ini telah memperolehi pengiktirafan ISO dan tiga lagi tidak mempunyai ISO. Analisis Deskriptif telah digunakan untuk menganalisa data yang dikumpul. Hasil kajian menunjukkan tidak terdapat perbezaan yang nyata di antara syarikat yang mempunyai ISO dan syarikat yang tidak mempunyai ISO dalam lima dimensi yang telah dikaji. Dapatan kajian ini menunjukkan bahawa pemilikan sijil ISO tidak menyumbangkan kepada wujudnya perbezaan dalam penggunaan pengukur prestasi kewangan (FI) dan penggunaan pengukur prestasi bukan kewangan (NFI). Ini disebabkan oleh syarikat-syarikat yang terlibat merupakan syarikat MICCI yang mempunyai perniagaan yang besar di peringkat antarabangsa. Kedudukan ini menggerakkan keperluan mereka untuk menggunakan satu set pengukur prestasi yang sesuai dan terkini dengan perniagaan mereka di peringkat antarabangsa. ISO digunakan sebagai alat dalam pemasaran.

## Abstract

This is a study, which aims to identify the performance measurement generally used in ISO-certified and non-ISO certified companies. Using case study approach, the specific objective is to see whether or not the measures differ. There are five parts! dimensions that have been studied. They are Relative Importance of Non-Financial Indicator (NFI) to Financial Indicator (FI) in Relation to Performance Dimension, Frequency of NFI Usage, Performance Attained During The Period, Perceived Importance of Performance and Assessment of Importance of Quality Criteria. Data was collected using questionnaire mailed to the respondents. The respondents are large companies members of the Malaysian International Chamber of Commerce & Industry (MICCI), which manufactures semiconductor. Three of the companies have obtained ISO-certification and three have not. Descriptive Analysis was used to analyze the data. The findings of the study showed that there were no notable differences exist in the five dimensions studied between ISO and non-ISO-certified companies. The findings of this study shows that ISO certification does not contribute to the existence of differences in usage of financial indicator (FI) and NFI. This is because the firms involved in the study are members of the MICCI and have substantial business internationally. Thus, this position have generated the need to use the most suitable and updated set of performance measures suitable to their international business needs. ISO is more used as a marketing tool.

## **ACKNOWLEDGEMENTS**

I express full gratitude and gratefulness to Allah S.W.T, the God who owns all the knowledge known or unknown to humankind. Peace be upon him, our prophet, Nabi Muhammad S.A.W. With His permission, I managed to complete this research paper. It was not an easy task and it took more than a year to finalize. Choosing the field for study was a problem too, as I did not want to be discouraged before the paper was completed. To my parents, Encik Hashim bin Azzis and Puan Maimunah bt. Haji Ahmad who had given me prolonged support and patience. To the supervisor, Professor Madya Dr. Zakaria Abas, who had given many constructive ideas in the making of the project paper. To my very attentive husband, Ahmad Bukhari bin Abdul Rahim, who had helped a lot in the format and presentation requirements of this paper. To all my colleagues who had given a lot of ideas and comments.

I express my true appreciation to all who had been involved directly and indirectly in the writing this paper. Only Allah will return the favor.

CONTENTS	Page
Permission To Use	i
Abstrak	ii
Abstract	iii
Acknowledgements	iv
List of Tables	ix
List of Abbreviations	xii
<b>CHAPTER ONE: INTRODUCTION</b>	<b>1</b>
1.0 Introduction	1
1.1 Problem Statement	1
1.2 Research Question	3
1.3 Research Objectives	3
1.4 Research dimension	4
1.5 Significance of Study	4
1.6 Limitation of Study	5
1.7 Operational Definition	5
1.7.1 Performance Measurement	6
1.7.1.1 Financial Indicator	7
1.7.1.2 Non-Financial Indicator	8
1.7.2 ISO-Certification	8
1.7.3 Operational Definition	9
1.8 Organization of The Study	9

1.9	Summary	10
<b>CHAPTER TWO : LITERATURE REVIEW</b>		<b>11</b>
2.0	Introduction	11
2.1	Past Research On Performance Measurement	11
2.2	Past Researches On Quality Standards	15
2.3	Past Researches On Decision-Making	18
2.4	Summary	26
<b>CHAPTER THREE: RESEARCH METHODOLOGY</b>		<b>27</b>
3.0	Introduction	27
3.1	Research Population	27
3.2	Sample	28
3.3	Sampling Techniques	28
3.4	Data Collection Method	28
3.5	Research Instrument	29
3.5.1	Importance of Non-Financial (NFI) Relative to Financial Indicators (FI) in Each Of The Decision-Making Context	30
3.5.2	Frequency of Non-Financial Indicator (NFI) Being Used By Management in Decision- Making Context	31
3.5.3	Performance Attained By The Department or Division During The Period (A Year) , And Indication of The Extent To Which Superior's Expectations Have Been Accomplished	32



3.5.4	Perceived Importance of The Dimension of Performance	33
3.5.5	Assessment of The Importance of Each of The quality Criteria Towards The Achievement of The Departmental Objectives	34
3.6	Data Analysis	35
3.7	Summary	36
<b>CHAPTER FOUR: RESEARCH FINDINGS</b>		37
4.0	Introduction	37
4.1	Company Profile	37
4.1.1	Company Location	38
4.1.2	Company Majority Owner	38
4.1.3	Number of Years Company Has Been Operating	39
4.1.4	Number of Personnel (Currently Employed)	39
4.1.5	ISO Certification	40
4.2	Information Regarding Respondent	41
4.3	Findings of Study: According To The Company's Response	42
4.3.1	Findings of Study For Company A	42
4.3.2	Findings of Study For Company B	49
4.3.3	Findings of Study For Company C	56
4.3.4	Findings of Study For Company D	63
4.3.5	Findings of Study For Company E	70
4.3.6	Findings of Study For Company F	76

4.4	Summary	83
<b>CHAPTER FIVE: DISCUSSION OF FINDINGS &amp; IMPLICATION</b>		84
5.0	Introduction	84
5.1	General Discussion of Results	85
5.1.1	Assessment of Relative Importance of NFI Compared To FI In The Decision-Making Context	85
5.1.2	Frequency of NFI Being Used In Decision-Making	88
5.1.3	Performance Attained During The Period To The Extent That Superior's Expectation Have Been Accomplished	90
5.1.4	Perception of Importance of The Dimension of Performance	93
5.1.5	Assessment of Importance of Each Quality Criteria	96
5.2	Comparison Between ISO-Certified and Non-ISO Certified Companies	98
5.3	Conclusion and Recommendation	99
	References	101-102
	Appendices	103-111

## ***LIST OF TABLES***

TABLE	TITLE	PAGE
Table 1.1	Selection of Financial and Non-Financial Criteria for Performance Management	2
Table 4.1	Location	38
Table 4.2	Company Majority Owner	38
Table 4.3	Number of Years Company Have Been Operating	39
Table 4.4	Number of Personnel	40
Table 4.5	ISO Certification	40
Table 4.6	Years since Certification Obtained	41
Table 4.7	Information Regarding Respondent	41
Table 4.8	Importance of NFI Relative To FI	42
Table 4.9	Frequency of NFI Being Used In The Following Context of Decision-Making	44
Table 4.10	Assessment of Performance Attained To The Extent That Superior's Expectation Have Been Accomplished	45
Table 4.11	Perception on the Importance of Dimension of Performance	47
Table 4.12	Assessment of Importance of Each Quality Criteria	48
Table 4.13	Importance of NFI Relative To FI	49
Table 4.14	Frequency of NFI Being Used In The Following Context of Decision-Making	51
Table 4.15	Assessment of Performance Attained During the Period Compared To Superior's Expectation	52

Table 4.16	Perception of Importance of Performance Dimension	54
Table 4.17	Assessment of The Importance of Each Quality Criteria	55
Table 4.18	Importance of NFI Relative To FI	56
Table 4.19	Frequency of NFI Being Used In The Following Context of Decision-Making	58
Table 4.20	Assessment of Performance Attained During The Period Using The Performance Dimension and The Extent Which The Superior's Expectation have Been Accomplished	59
Table 4.21	Level of Importance of Performance Dimension To The Success of The Firm	61
Table 4.22	Assessment of the Importance of Each Quality Criteria	62
Table 4.23	Importance of NFI Relative To FI	63
Table 4.24	The Frequency of That NFI Are Being Used	65
Table 4.25	Performance Attained During The Period Compared To Assessment of Superior	66
Table 4.26	Level of Importance of Performance Dimension To The Success of The Firm	68
Table 4.27	Level of Importance of Each Quality Criteria	69
Table 4.28	Importance of NFI Relative To FI	70
Table 4.29	Frequency of NFI Are Being Used	71
Table 4.30	Performance Attained During The Period Compared to Superior's Assessment	73

Table 4.31	Perception on the Importance of the Performance Dimension	74
Table 4.32	Importance of Quality Criteria	76
Table 4.33	Importance of NFI Relative To FI	77
Table 4.34	Frequency of NFI Being Used In The Following Context	78
Table 4.35	Performance Attained During The Period Compared To Assessment of Superior	79
Table 4.36	Perception of Importance of Performance Dimension	81
Table 4.37	Importance of Quality Criteria	82
Table 5.1	Importance of NFI Relative To FI in decision-making context	86
Table 5.2	Frequency of NFI Being Used In The Following Decision-Making Context	89
Table 5.3	Assessment of Performance Attained to the extent that superior's expectations have been accomplished	91
Table 5.4	Perception of Importance of Performance Dimension	94
Table 5.5	Importance of Each Quality Criteria	97

## LIST OF ABBREVIATIONS

FI	Financial Indicator
NFI	Non-Financial Indicator
MICCI	Malaysian International Chamber of Commerce & Industry
Co A	Company A
Co B	Company B
Co C	Company C
Co D	Company D
Co E	Company E
Co F	Company F

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.0 Introduction**

The first chapter provides an overview of the project paper. It has nine sections inclusive of the summary. The first section poses to the problem statement. This includes the definition of performance measure, financial and non-financial. The next section addresses the research questions. The third section is the research objectives need to be attained. The fourth section is the research dimensions of this study. The significance of the study is the fifth section. The sixth item is the limitations of the study. The seventh is the operational definition. The eighth is the organization of the study. Summary of the chapter wraps up the chapter. The next chapter will deal with literature review.

#### **1.1 Problem Statement**

Performance measurement (PM) has always been a subject of interest to managers. It has been described as the systematic assignment of numbers to entities (Zairi, 1992). It would have been easy if the PM process is a simple and straightforward one. However, it does not appear to be that way.

The contents of  
the thesis is for  
internal user  
only



## REFERENCES

- Beach R., Muhlemann A. P., Price D. H. R., Paterson A., and Sharp J. A. (2000) Manufacturing Operations and Strategic Flexibility: Survey And Cases, *International Journal of Operations and Production Management*, Vol. 20, Issue 1 <http://www.emerald-library.com>
- Brindle, M. (1999) Games Decision Makers Play, *Management Decision*, Vol. 37, Issue 8. <http://www.emerald-library.com>
- Chelsom, J. V (1997) Performance-driven Quality, *Logistics Information Management*, Vol. 10, Issue 6 <http://www.emerald-library.com>
- Chelsom, J. V. (1997) Total Quality Through Empowered Training, *Training For Quality*, Vol. 5, Issue 4 <http://www.emerald-library.com>
- De Chernatony L. and Harris F (2000) Added Value: It's Nature, Roles and Sustainability, *European Journal of Marketing*, Vol 34, No1 2,2000, pp. 39-56 <http://www.emerald-library.com>
- Gadenne, D. (1999), Critical Success Factors For Small Business: An Inter-Industry Comparison, *International Small Business Journal*, Vol. 17 (1)
- Haq, T. And Jeffries A. (1995) Companies To Look To Non-Financial Measures, *Management Accounting : Magazine For Chartered Accountants*, Vol. 73, Issue 3, March 1995. <http://www.chswebust.com>
- Horngren, Foster and Datar (1994), *Cost Accounting: A Managerial Emphasis*, 8<sup>th</sup> edition, Prentice Hall, New Jersey.
- Ittner, C. D., And Larcker, D. F. (1998) Are Non-Financial Measures Leading Indicators Of Financial Performance ? An Analysis Of Customer Satisfaction, *Journal Of Accounting Research*, Vol. 36, 1998.

- Jazayeri M. and Hopper T. (1999) Management Accounting Within World Class Manufacturing: A Case Study, *Management Accounting Research*, 1999, 10, pp 263-301
- Jonsson P. and Lesshammar M. (1999) Evaluation And Improvement of Manufacturing Performance Measurement Systems- The Role of OEE, *International Journal of Operations & Production Management*, Vol. 19, Issue 1. <http://www.emerald-library.com>
- Koo L.C, Tao F. K. C and Koo H (1999) Charting Staff Attitude Along The Journey Towards Getting ISO Certification, *Managerial Auditing Journal*, Vol. 14, Issue 1 2. <http://www.emerald-library.com>
- Krajewski L. J. And Ritzman, L. P. (1999) Operations Management : Strategy And Analysis, 5<sup>th</sup> Edition, Addison-Wesley ,USA.
- McIvor, R. (2000) A Practical Framework For Understanding The Outsourcing Process. *Supply Chain Management: An International Journal*, Vol. 5, Issue 1.
- Raggad, B. G. (2000) Possibilistic Group Support System For Pricing And Inventory Problems. *Logistics Information Management*, Vol. 13, Issue 2. <http://www.emerald-library.com>
- Sharman, P. (1992), Benchmarking: Opportunity For Accountants, *CMA Magazine*, Jul/ Aug 1992, Vol. 66 (6)
- Sharman, P. (1996) Activity/ Process Budgets: A Tool For Change Management, *CMA Magazine*, March 1996, Vol. 70 (2)
- SIRIM QAS (1998) SIRIM Directory of Certified Products and Companies: 1998
- Zairi M. (1992), TQM-Based Performance Measurement: Practical Guidelines, 1<sup>st</sup> edition, Technical Communications (Publishing) Ltd. England